HEXAWARE

Coding Challenge3

Crime Management Shema DDL and DML

Solve the below queries:

1. Select all open incidents.

```
mysql> SELECT *
    -> FROM Crime
    -> WHERE Status = 'Open';
+---------+--------------+--------------+---------------------------+------------------------------------+--------+
| CrimeID | IncidentType | IncidentDate | Location                  | Description                        | Status |
+---------+--------------+--------------+---------------------------+------------------------------------+--------+
|       1 | Robbery      | 2023-09-15   | 123 Main St, Cityville    | Armed robbery at a convenience store | Open   |
+---------+--------------+--------------+---------------------------+------------------------------------+--------+
1 row in set (0.00 sec)
```

2. Find the total number of incidents.

```
mysql> SELECT COUNT(*) AS TotalIncidents
    -> FROM Crime;
+----------------+
| TotalIncidents |
+----------------+
|              3 |
+----------------+
1 row in set (0.01 sec)
```

3. List all unique incident types

```
mysql> SELECT DISTINCT IncidentType
    -> FROM Crime;
+--------------+
| IncidentType |
+--------------+
| Robbery      |
| Homicide     |
| Theft        |
+--------------+
3 rows in set (0.00 sec)
```

4. Retrieve incidents that occurred between '2023-09-01' and '2023-09-10'

```
mysql> SELECT *
    -> FROM Crime
    -> WHERE IncidentDate BETWEEN '2023-09-01' AND '2023-09-10';
+---------+--------------+--------------+---------------------------+------------------------------+--------+
| CrimeID | IncidentType | IncidentDate | Location                  | Description                  | Status |
+---------+--------------+--------------+---------------------------+------------------------------+--------+
|       3 | Theft        | 2023-09-10   | 789 Oak St, Villagetown   | Shoplifting incident at a mall | Closed |
+---------+--------------+--------------+---------------------------+------------------------------+--------+
1 row in set (0.00 sec)
```

5. List persons involved in incidents in descending order of age.

```
mysql> SELECT Name, Age
    -> FROM Victim
    -> WHERE Age IS NOT NULL
    -> ORDER BY Age DESC;
```

6. Find the average age of persons involved in incidents.

```
mysql> SELECT AVG(Age) AS AverageAge
    -> FROM Victim
    -> WHERE Age IS NOT NULL;
```

7. List incident types and their counts, only for open cases.

```
mysql> SELECT IncidentType, COUNT(*) AS IncidentCount
    -> FROM Crime
    -> WHERE Status = 'Open'
    -> GROUP BY IncidentType;
+--------------+---------------+
| IncidentType | IncidentCount |
+--------------+---------------+
| Robbery      |             1 |
+--------------+---------------+
1 row in set (0.00 sec)
```

8. Find persons with names containing 'Doe'

```
mysql> SELECT *
    -> FROM Suspect
    -> WHERE Name LIKE '%Doe%';
Empty set (0.00 sec)
```

9. Retrieve the names of persons involved in open cases and closed cases.

```
mysql> SELECT Name
    -> FROM Victim
    -> WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Open')
    -> UNION
    -> SELECT Name
    -> FROM Suspect
    -> WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE Status = 'Open');
+----------+
| Name     |
+----------+
| John Doe |
| Robber 1 |
+----------+
2 rows in set (0.01 sec)
```

10. List incident types where there are persons aged 30 or 35 involved

```
mysql> SELECT DISTINCT c.IncidentType
    -> FROM Crime c
    -> JOIN Victim v ON c.CrimeID = v.CrimeID
    -> WHERE v.Age IN (30, 35);
```

11. Find persons involved in incidents of the same type as 'Robbery'

```
mysql> -- For Victims
mysql> SELECT *
    -> FROM Victim
    -> WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery');
+----------+---------+----------+---------------------+----------------+
| VictimID | CrimeID | Name     | ContactInfo         | Injuries       |
+----------+---------+----------+---------------------+----------------+
|        1 |       1 | John Doe | johndoe@example.com | Minor injuries |
+----------+---------+----------+---------------------+----------------+
1 row in set (0.00 sec)

mysql>
mysql> -- For Suspects
mysql> SELECT *
    -> FROM Suspect
    -> WHERE CrimeID IN (SELECT CrimeID FROM Crime WHERE IncidentType = 'Robbery');
+-----------+---------+----------+-------------------------+------------------------------+
| SuspectID | CrimeID | Name     | Description             | CriminalHistory              |
+-----------+---------+----------+-------------------------+------------------------------+
|         1 |       1 | Robber 1 | Armed and masked robber | Previous robbery convictions |
+-----------+---------+----------+-------------------------+------------------------------+
1 row in set (0.00 sec)
```

12. List incident types with more than one open case.

```
mysql> SELECT IncidentType, COUNT(*) AS OpenCases
    -> FROM Crime
    -> WHERE Status = 'Open'
    -> GROUP BY IncidentType
    -> HAVING COUNT(*) > 1;
Empty set (0.00 sec)
```

13. List all incidents with suspects whose names also appear as victims in other incidents.

```
mysql> SELECT c.*, s.*
    -> FROM Crime c
    -> JOIN Suspect s ON c.CrimeID = s.CrimeID
    -> WHERE s.Name IN (SELECT Name FROM Victim WHERE CrimeID = c.CrimeID);
Empty set (0.00 sec)
```

14. Retrieve all incidents along with victim and suspect details.

```
mysql> SELECT c.*, v.*, s.*
    -> FROM Crime c
    -> LEFT JOIN Victim v ON c.CrimeID = v.CrimeID
    -> LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
+---------+--------------+------------+--------------------+---------------------------------+---------------------+----------+---------+--------------+---------------------+---------------+-----------+---------+----------+---------------------+---------------------------+
| CrimeID | IncidentType | IncidentDate | Location         | Description                     | Status              | VictimID | CrimeID | Name         | ContactInfo         | Injuries      | SuspectID | CrimeID | Name     | Description         | CriminalHistory           |
+---------+--------------+------------+--------------------+---------------------------------+---------------------+----------+---------+--------------+---------------------+---------------+-----------+---------+----------+---------------------+---------------------------+
|       1 | Robbery      | 2023-09-15 | 123 Main St, Cityville | Armed robbery at a convenience store | Open           |        1 |       1 | John Doe     | johndoe@example.com | Minor injuries |        1 |       1 | Robber 1 | Armed and masked robber | Previous robbery convictions |
|       2 | Homicide     | 2023-09-20 | 456 Elm St, Townsville | Investigation into a murder case | Under Investigation |        2 |       2 | Jane Smith   | janesmith@example.com | Deceased     |        2 |       2 | Unknown  | Investigation ongoing | NULL                     |
|       3 | Theft        | 2023-09-10 | 789 Oak St, Villagetown | Shoplifting incident at a mall | Closed           |        3 |       3 | Alice Johnson | alicejohnson@example.com | None       |        3 |       3 | Suspect 1 | Shoplifting suspect | Prior shoplifting arrests |
+---------+--------------+------------+--------------------+---------------------------------+---------------------+----------+---------+--------------+---------------------+---------------+-----------+---------+----------+---------------------+---------------------------+
3 rows in set (0.00 sec)
```

15. Find incidents where the suspect is older than any victim

```
mysql> SELECT c.*, s.*, v.*
    -> FROM Crime c
    -> JOIN Suspect s ON c.CrimeID = s.CrimeID
    -> JOIN Victim v ON c.CrimeID = v.CrimeID
    -> WHERE s.Age > ANY (SELECT Age FROM Victim WHERE CrimeID = c.CrimeID);
```

16. Find suspects involved in multiple incidents:

```
mysql> SELECT SuspectID, Name, COUNT(DISTINCT CrimeID) AS IncidentCount
    -> FROM Suspect
    -> GROUP BY SuspectID, Name
    -> HAVING COUNT(DISTINCT CrimeID) > 1;
Empty set (0.00 sec)
```

17. List incidents with no suspects involved.

```
mysql> SELECT c.*
    -> FROM Crime c
    -> LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID
    -> WHERE s.SuspectID IS NULL;
Empty set (0.00 sec)
```

18. List all cases where at least one incident is of type 'Homicide' and all other incidents are of type 'Robbery'.

```
mysql> SELECT *
    -> FROM Crime
    -> WHERE IncidentType = 'Homicide'
    ->   AND CrimeID IN (
    ->     SELECT CrimeID
    ->     FROM Crime
    ->     WHERE IncidentType = 'Robbery'
    ->   );
Empty set (0.00 sec)
```

19. . Retrieve a list of all incidents and the associated suspects, showing suspects for each incident, or 'No Suspect' if there are none

```
mysql> SELECT c.*,
    ->     COALESCE(s.Name, 'No Suspect') AS SuspectName,
    ->     COALESCE(s.Description, 'No Description') AS SuspectDescription,
    ->     COALESCE(s.CriminalHistory, 'No Criminal History') AS SuspectCriminalHistory
    -> FROM Crime c
    -> LEFT JOIN Suspect s ON c.CrimeID = s.CrimeID;
+---------+--------------+------------+--------------------+---------------------------------+---------------------+-------------+---------------------+---------------------------+
| CrimeID | IncidentType | IncidentDate | Location         | Description                     | Status              | SuspectName | SuspectDescription  | SuspectCriminalHistory    |
+---------+--------------+------------+--------------------+---------------------------------+---------------------+-------------+---------------------+---------------------------+
|       1 | Robbery      | 2023-09-15 | 123 Main St, Cityville | Armed robbery at a convenience store | Open          | Robber 1    | Armed and masked robber | Previous robbery convictions |
|       2 | Homicide     | 2023-09-20 | 456 Elm St, Townsville | Investigation into a murder case | Under Investigation | Unknown     | Investigation ongoing | No Criminal History      |
|       3 | Theft        | 2023-09-10 | 789 Oak St, Villagetown | Shoplifting incident at a mall | Closed          | Suspect 1   | Shoplifting suspect | Prior shoplifting arrests |
+---------+--------------+------------+--------------------+---------------------------------+---------------------+-------------+---------------------+---------------------------+
3 rows in set (0.00 sec)
```

20. List all suspects who have been involved in incidents with incident types 'Robbery' or
'Assault'

```
mysql> SELECT DISTINCT s.*
    -> FROM Suspect s
    -> JOIN Crime c ON s.CrimeID = c.CrimeID
    -> WHERE c.IncidentType IN ('Robbery', 'Assault');
+-----------+---------+----------+------------------------+------------------------------+
| SuspectID | CrimeID | Name     | Description            | CriminalHistory              |
+-----------+---------+----------+------------------------+------------------------------+
|         1 |       1 | Robber 1 | Armed and masked robber | Previous robbery convictions |
+-----------+---------+----------+------------------------+------------------------------+
1 row in set (0.00 sec)
mysql>
```